

**WHAT IS CLAIMED IS:**

1. A wireless portable communication device configured to provide appropriate impedance for a desired antenna performance based upon a configuration of the wireless portable communication device, the wireless portable communication device comprising:
  - 5 a radiating element;
  - electrical circuits for wireless communication coupled to the radiating element, the electrical circuits including an electrical reference;
  - 10 a selectable ground return impedance block coupled to the electrical reference, the selectable ground impedance block configured to provide a plurality of impedance values;
  - a chassis coupled to the selectable ground return impedance block; and
  - 15 a configuration detector coupled to the selectable ground return impedance block, the configuration detector configured to detect a configuration of the wireless portable communication device and to produce a control signal indicative of the detected configuration which selects one of the plurality of impedance values.
- 20 2. The wireless portable communication device of claim 1, wherein the configuration detector is configured to detect at least one of:
  - a position of a first housing of the wireless portable communication relative to a second housing of the wireless portable communication device, the second housing movably coupled to the first housing,
  - 25 presence of an attachable accessory attached to the wireless portable communication device,
  - a frequency band of operation,
  - a frequency sub-band of operation, wherein the frequency band of operation comprises a plurality of frequency sub-bands of operation; and
  - 30 a mode of operation.

3. The wireless portable communication device of claim 2, wherein the position of the first housing relative to the second housing includes an opened position of the wireless portable communication device wherein at least one of:
  - 5 the first housing unfolds relative to the second housing;
  - the first housing rotates relative to the second housing; and
  - the first housing slides relative to the second housing.
4. The wireless portable communication device of claim 2, wherein the position of the first housing relative to the second housing includes a closed position of the wireless portable communication device wherein at least one of:
  - 10 the first housing unfolds relative to the second housing;
  - the first housing rotates relative to the second housing; and
  - 15 the first housing slides relative to the second housing.
5. The wireless portable communication device of claim 2, wherein:
  - 20 the selectable ground return impedance block comprises a plurality of selectable coupling impedances, each of the plurality of selectable coupling impedances corresponding to a specific detectable configuration of the wireless portable communication device, and
  - 25 the control signal selects one of the plurality of impedance values by selecting an appropriate selectable coupling impedances of the plurality of selectable coupling impedances corresponding to the detected configuration.
6. The wireless portable communication device of claim 2, wherein:
  - 30 the selectable ground return impedance block comprises a variable impedance device capable of varying impedance, and
  - the control signal is effective in adjusting the variable impedance device to provide an appropriate impedance corresponding to the detected configuration.

7. A method in a wireless portable communication device for selecting one of a plurality of ground return impedances coupled between a chassis and an electrical reference of electrical circuits for wireless communication for a desired antenna performance, the method comprising:

5                   detecting a configuration of the wireless portable communication device; and

                  selecting an appropriate impedance of the plurality of ground return impedances based upon the detected configuration.

10 8. The method of claim 7, wherein detecting a configuration of the wireless portable communication device by detecting at least one of:

                  a position of a first housing of the wireless portable communication device relative to a second housing of the wireless portable communication device, the second housing movably coupled to the first housing,

15                   presence of an attachable accessory attached to the wireless portable communication device

                  a frequency band of operation,

                  a frequency sub-band of operation, wherein the frequency band of operation comprises a plurality of frequency sub-bands of operation; and

20                   a mode of operation.

9. The method of claim 8, further comprising opening the wireless portable communication device before detecting the position of the first housing relative to the second housing by at least one of:

25                   unfolding the first housing relative to the second housing;

                  rotating the first housing relative to the second housing; and

                  sliding the first housing relative to the second housing.

10. The method of claim 8, further comprising closing the wireless portable communication device before detecting the position of the first housing relative to the second housing by at least one of:
  - 5 unfolding the first housing relative to the second housing;
  - rotating the first housing relative to the second housing; and
  - sliding the first housing relative to the second housing.
11. The method of claim 7, wherein selecting an appropriate impedance of the plurality of ground return impedances based upon the detected configuration by selecting an appropriate selectable coupling impedance of a plurality of selectable coupling impedances, each selectable coupling impedance corresponding to a specific detected configuration.
10. The method of claim 7, wherein selecting an appropriate impedance of the plurality of ground return impedances based upon the detected configuration by varying the impedance of a variable impedance device corresponding to the detected configuration.
15. The method of claim 7, wherein selecting an appropriate impedance of the plurality of ground return impedances based upon the detected configuration by varying the impedance of a variable impedance device corresponding to the detected configuration.

13. An antenna arrangement for a wireless portable communication device having a first housing and a second housing, the first housing movably couple to the second housing, the wireless portable communication device having a closed position and an opened position, each position defined by a relative position of the first housing to the second housing, each position corresponding to one of detectable configurations, the first and second housings coupled to a configuration detector, the antenna arrangement configured to provide a desired antenna performance based upon a detected configuration of the wireless portable communication device, the antenna arrangement comprising:

- an antenna;
- an electrical reference coupled to the antenna;
- a selectable ground return impedance block coupled to the electrical reference and to the configuration detector, the selectable ground return impedance block adapted to receive a control signal indicative of the detected configuration of the wireless portable communication device from the configuration detector, the selectable ground return impedance block adapted to provide an appropriate impedance based upon the control signal; and
- a chassis coupled to the selectable ground return impedance block.

14. The antenna arrangement of claim 13, wherein the configuration detector is further adapted to detect at least one of:

- presence of an attachable accessory attached to the wireless portable communication device,
- a frequency band of operation,
- a frequency sub-band of operation, wherein the frequency band of operation comprises a plurality of frequency sub-bands of operation; and
- a mode of operation.

15. The antenna arrangement of claim 14, wherein the opened position of the wireless portable communication device includes at least one of:

the first housing is configured to unfold relative to the second housing;  
the first housing is configured to rotate relative to the second housing;

5 and

the first housing is configured to slide relative to the second housing.

16. The antenna arrangement of claim 14, wherein the closed position of the wireless portable communication device includes at least one of:

10 the first housing is configured to unfold relative to the second housing;  
the first housing is configured to rotate relative to the second housing;

and

the first housing is configured to slide relative to the second housing.

15 17. The antenna arrangement of claim 13, wherein:

the selectable ground return impedance block comprises a plurality of selectable coupling impedances, each of the plurality of selectable coupling impedances corresponding to a specific detectable configuration of the wireless portable communication device.

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18. The antenna arrangement of claim 13, wherein:

the selectable ground return impedance block comprises a variable impedance device capable of varying impedance.